Claims

We claim:

1. A method for training a self ordering map, comprising the steps of:

initializing a set of weights of a self-ordering map;

iteratively training said weights over many training epochs;

for at least a number of said epochs, said step of iteratively training including updating said weights based on a learning rate that is generated according to a function that changes in a fashion that is other than monotonically a decreasing value with training epoch.

2. A method as in claim 1, wherein said step of iteratively training includes updating said weights based on a learning rate that is generated according to a random or pseudorandom function.

3. A method as in claim 2 wherein said step of iteratively training includes updating said weights based on a learning rate that is generated according to a function that is such that values over which said learning rate may range decreases with training epoch.

4. A method as in claim 2 wherein said step of iteratively training includes updating said weights based

on a learning rate that is generated according to a function that is such that values over which said learning rate tend to decrease with training epoch.

5. A method as in claim 1 wherein said step of iteratively training includes updating said weights based on a learning rate that is generated according to a function that is such that values over which said learning rate may range decreases with training epoch.

6. A method as in claim 5 wherein said step of iteratively training includes updating said weights based on a learning rate that is generated according to a function that is such that values over which said learning rate tend to decrease with training epoch.

7. A method as in claim 1 wherein said step of iteratively training includes updating said weights based on a learning rate that is generated according to a function that is such that values over which said learning rate tend to decrease with training epoch.

8. A method of training a self ordering feature map, comprising the steps of:

choosing a random value for initial weight vectors;

drawing a sample from a set of training sample vectors and applying it to input nodes of said self ordering feature map;

identifying a winning competition node of said self ordering feature map according to a least distance criterion;

adjusting a synaptic weight of at least said winning node;

said step of adjusting including selecting a value for a learning rate used to update said synaptic weight that is based on a function other than one that is monotonic with training epoch;

iteratively repeating said steps of drawing, identifying, and adjusting.

9. A method as in claim 8, wherein said step of adjusting includes updating said weights based on a learning rate that is generated according to a random or pseudorandom function.

10. A method as in claim 9 wherein said step of adjusting includes updating said weights based on a learning rate that is generated according to a function that is such that values over which said learning rate may range decreases with training epoch.

11. A method as in claim 9 wherein said step of adjusting includes updating said weights based on a learning rate that is generated according to a function that is such that values over which said learning rate tend to decrease with training epoch.

12. A method as in claim 8 wherein said step of adjusting includes updating said weights based on a learning rate that is generated according to a function that is such that values over which said learning rate may range decreases with training epoch.

13. A method as in claim 12 wherein said step of adjusting includes updating said weights based on a learning rate that is generated according to a function that is such that values over which said learning rate tend to decrease with training epoch.

14. A method as in claim 8 wherein said step of adjusting includes updating said weights based on a learning rate that is generated according to a function that is such that values over which said learning rate tend to decrease with training epoch.